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How to Obtain Federal Grants to Build Municipal Wastewater Treatment Works

Environmental Protection Agency

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How to Obtain Federal Grants

to Build
Municipal Wastewater
Treatment Works

PB 257 655

Hold it! *Don't just pass this handbook on. Take 10 minutes or so to read the first 15 pages. That's all it takes. You'll then be ready to deal with professionals to get your construction grants approved and your project started. Begin reading. It's your project.* Get involved.

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The Handbook was prepared by the Municipal Construction Division, Water Program Operations, Office of Water and Hazardous Materials.

The basic organization of the Handbook and the initial drafts of the text materials were prepared, under contract, by Ecol Sciences Inc., Vienna, Virginia, under the direction of Albert T. Bowyer. The reviewing and editing of the Handbook, to validate its accuracy and ensure that it properly and effectively conveyed current Agency policy, were performed by the Construction Grants Handbook Review Committee comprised of Stuart Peterson, Region I; Richard Salkie, Region II; George Collins, Region IV; Ronald Ritter, Region VII; Harold P. Cahill, Jack Washburn, Albert Pelmoter, Royal Thayer and Evelyn Thornton, Headquarters, and Thomas Ferry, EPA (retired). Albert L. Pelmoter, Chief, Policy and Procedural Guidance Staff, Construction Operations Branch, Municipal Construction Division, served as project manager for the development of the Handbook.

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16. Abstract

The community which applies for construction grant funds is participating in the massive program of water pollution control and abatement to which this Nation committed itself with the passage of the Federal Water Pollution Control Act of 1972 (Public Law 92-500).

In providing federal funds for the construction of certain treatment facilities, the Act requires that the parties to this undertaking follow a series of steps designed to insure that the best possible project results from the time, effort and money expended.

This handbook has been prepared to assist municipal officials in this effort. It contains a summary of the requirements of the Construction Grants Program and the responsibilities that each participant bears, omitting much of the detail.

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Foreword

The community which applies for construction grant funds is participating in the massive program of water pollution control and abatement to which this Nation committed itself with the passage of the Federal Water Pollution Control Act of 1972 (Public Law 92–500). This legislation, however wide-ranging, has as its central theme the importance of cooperation among local, State and Federal agencies charged with the responsibility for restoring and preserving the quality of our Nation's waters. In building and operating sewage treatment facilities, localities are fulfilling their responsibility under the Act.

In providing Federal funds for the construction of certain treatment facilities, the Act requires that the parties to this undertaking follow a series of steps designed to insure that the best possible project results from the time, effort and money expended.

This handbook has been prepared to assist municipal officials in this effort. It contains a summary of the requirements of the Construction Grants Program and the responsibilities that each participant bears, omitting much of the detail. For that reason, applicants are urged to establish and maintain ongoing contacts with their consultants and the State and Federal agencies administering water pollution control programs. The greater the involvement in and understanding of the grant process, the greater the chances of success.

John T. Rhett
Deputy Assistant Administrator
for Water Program Operations

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Introduction

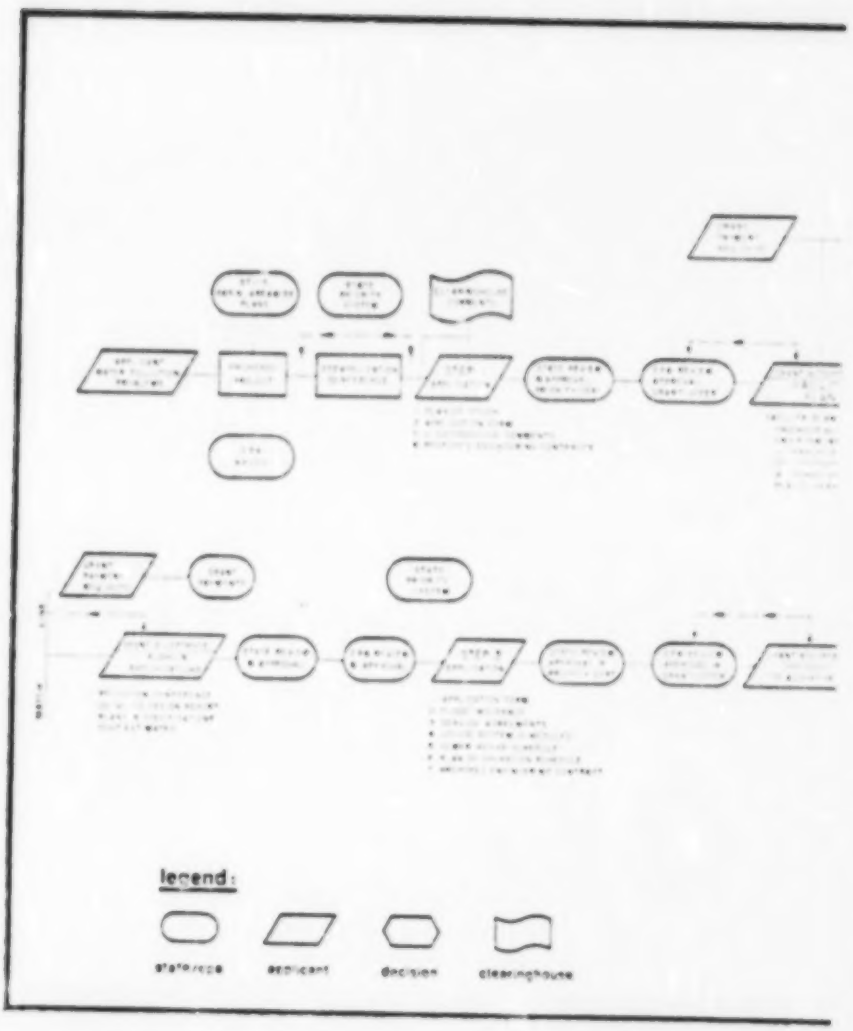
This handbook was written to give public officials a little help in understanding the "in's and out's", the "do's and don'ts" and the "what if's" involved in carrying out the Construction Grants Program. Municipal officials obviously have many on-going responsibilities over and above constructing a sewage treatment facility to keep them busy. Therefore, EPA has summarized the many regulations, guidelines, technical bulletins and policy statements which govern the program in this relatively short and, we hope, useful handbook.

Although municipalities will retain a competent consultant to assist them with program details, the ultimate responsibility for project undertakings lies with the municipal official. The construction of a sewage treatment facility is a community enterprise and, while the professionals can do the work, it is the community which benefits and, of course, pays. Representatives of that community therefore need to know some of the "basics" involved in the program so that the greatest benefits will derive from the money spent.

This handbook will provide some of these "basics" so that municipal officials can be more than "sidewalk superintendents". With it, they will be able to ask the questions which will help to insure that the professionals are doing the job they are paid to do and to assure themselves that the documents necessary for grant awards are started and completed with a minimum loss of time and effort.

The first section of the handbook is a summary of items which the applicant must know, do or arrange to be done. Most of these entries are followed by a reference number which calls attention to a more detailed discussion of the topic in the second section. The items are presented in chronological order, starting at Step 1 and continuing through final payment and audit of the project.

The handbook does not cover every situation nor reference every pertinent regulation. It does, however, give responsible municipal officials the background needed to become personally involved and to insure that their project moves freely through the grant process.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Part I: A brief summary of information needed by local officials to obtain a construction grant from the Environmental Protection Agency to build wastewater treatment facilities

1.0 PREAPPLICATION INFORMATION

NOTE: The following are items of general information which need to to be understood before applying for a grant.

Ref

1.1 Applicant Eligibility 8.1

To be eligible for Federal assistance the applicant must be a public body created under State law and must have the legal authority for the disposal of sewage, industrial wastes or other wastes. The applicant must also have authority to plan, design, finance, construct, operate and maintain sewage treatment works.

1.2 Types of Projects 8.2

The following types of projects are eligible for assistance under P.L. 92–500 and are entitled to an EPA grant equal to 75% of the allowable project costs.

a. **Sewage Treatment Plants**—new, expanded, upgraded; must provide at least secondary treatment.

b. **Interceptor Sewers**—new or rehabilitated.

c. **Sewage Collection Systems**—new, expanded or rehabilitated, including pumping stations; the community must have been in existence before October 18, 1972.

d. **Combined Sewer Overflow Control Systems**—reducing, storing, treating, separating or disposing of wastewaters from combined storm and sanitary sewer systems.

1.3 Priority List 8.3

Annually, each State is allotted a specific sum of money for construction grants. Projects are ranked in priority order by the States, on the basis of specific criteria, to determine which will receive these funds. An applicant's project must be on the State priority list to qualify for a grant.

1.4 Three Step Construction Grant Process 8.4

The construction grants process provides for projects in three steps, as follows:

Step 1—A project to perform Preliminary Planning and Engineering ("Facility Plan")

Step 2—A project to prepare Detailed Plans and Specifications

Step 3—A project for Construction of Facilities.

1.5 State Water Quality Management Plan 8.5

Sometimes referred to as basin 303(e) plans, these studies are carried out by the States to determine the level of treatment required for every sewage treatment plant within each river drainage basin in the State.

Ref.

1.6 Areawide Waste Treament Management Plan 8.6

Sometimes referred to as 208 plans, these studies are undertaken both for designated areas—usually urban or metropolitan areas which have particularly bad water pollution problems—as well as for non-designated areas. Where these studies are completed, all projects must conform with the study recommendations. If the studies are not completed, the local or State 208 agency must have an opportunity to comment on proposed sewage treatment projects in its area.

1.7 Facility Planning 8.7

Also known as 201 plans, these studies, prepared by the grantee, are the first step (Step 1) in the construction grant process. They investigate the specific requirements of a planning area defined by the State, identify the water pollution problem, evaluate alternatives and recommend a solution. Public participation in the decision making process is required through public hearings.

1.8 Municipal NPDES Permits 8.8

Permits are issued by the States or EPA for existing or new waste discharges under the National Pollution Discharge Elimination System (NPDES). Meeting the treatment and time requirements specified in the permit frequently prompts a municipality to apply for a construction grant.

1.9 Clearinghouse(s) 8.9

The Federal Office of Management and Budget (OMB) Circular A-95, requires that all projects being financed in whole or in part with Federal funds be reviewed by a central State and/or regional clearinghouse.

1.10 Preapplication Conference ....N/A

To make certain that applicants clearly understand the requirements they must meet to obtain construction grants, a preapplication conference is held. At this conference, the roles of the consultant, the State and the EPA in the grant process are explained. Most preapplication conferences are conducted by the State; therefore, applicants should contact their State agency as soon as possible to arrange for one. (A listing of State Offices appears in the Appendix.)

As noted, the grant process for building sewage treatment facilities has three steps. The first step, which is very involved, will be discussed in considerable detail at the conference. Requirements pertaining to a Step 1 project grant are summarized below.

2.0 STEP 1 APPLICATION

NOTE: To apply for a Step 1 grant, the following items must be submitted to the State agency. Application forms and kits are available from the State and are usually furnished at the preapplication conferences.

Ref

2.1 Plan of Study **9.1**

A brief description is given of the scope of work to be undertaken in planning the project, including problem areas and issues to be resolved. Also, itemized costs of preparation must be shown and a work schedule must be included.

2.2 Clearinghouse Comments **8.9**

Comments concerning the proposed project are to be obtained from the State and/or Regional Clearinghouse in accordance with paragraphs 1.9 above and 8.9 below.

2.3 Application, EPA Form 5700–32 ..... **9.2**

Instructions for completing the application are printed on the form. Part II-Section B, site information, is not required for a Step 1 grant. Part V, Assurances, should be read carefully. A resolution authorizing the official representative (Mayor, Councilman, etc.) to act on behalf of the applicant must be included with the submission.

2.4 Selection of Professional Engineer **9.3**

Copies of proposed contracts, or an explanation of how contracts for professional services will be awarded, must be submitted to EPA for review.

NOTE: The application and accompanying documents must be reviewed and approved by both the State agency and EPA. DO NOT proceed with any work on the project until approval to do so is received from EPA. No payment may be made for work undertaken without EPA approval. Applicants will be notified in writing when a grant is approved and instructions will be provided as to procedures for accepting the grant and executing the Grant Agreement (EPA Form 5700–20). The executed Grant Agreement constitutes a contractual obligation between the Federal government and the grantee.

Each Federally assisted project is subject to audit; therefore, it is important that accurate financial records be kept. These records must clearly identify all costs pertaining to the EPA grant assisted project, must cover all funds received and disbursed, must distinguish between allowable and nonallowable project costs, and must be made available to EPA upon request.

Similarly, engineering consultants are required to maintain accurate records identifying project costs claimed for Federal participation.

3.0 STEP 1: FACILITY PLAN

NOTE: After receiving a Step 1 grant, the grantee begins to prepare a facility plan as prescribed in the law and Federal regulations. Helpful booklets entitled Guidance For Preparing A Facility Plan, *May 1975, and* Model Facility Plan For A Small Community, *September 1975, are available from the State or EPA. Key elements of the plan are listed below.*

Ref

3.1 Effluent Limitations **10.1**

The State or EPA establishes the level of treatment necessary for each project and designates the type and quantity of pollutants which may be discharged.

3.2 Existing and Future Situations ..... **N/A**

The plan must describe the existing planning service area and forecast what the area will be like in the future.

3.3 Alternatives **10.2**

Once the size and scope of the water pollution problem is defined, the plan must show the various solutions to the problem with an evaluation of each alternative.

3.4 Infiltration/Inflow (I/I) Analysis **10.3**

For projects with existing sewers, the plan must show the amounts of groundwater (infiltration) or stormwater (inflow) leaking into the sewer system and how much of this leakage can be eliminated economically.

3.5 Sewer System Evaluation Survey **10.4**

In those cases where the infiltration inflow analysis indicates excessive sewer leakage, investigations need to be carried out to locate the specific leaks and to estimate the cost of correction.

3.6 Environmental Assessment **10.5**

As a part of the facility plan, each alternative must be evaluated from an environmental standpoint. The environmental impact is weighed along with the engineering, cost, social and economic impacts of each alternative. Where conflicts exist, reasonable trade-offs are made.

3.7 Public Input **10.6**

At least one official public hearing must be held to obtain the public's view of the proposed project. When necessary, accommodating revisions to the proposed project are made.

3.8 Historical and Archaeological Investigations **10.7**

Federal and State laws require the protection of valuable historic and archaeological sites. Each State has a State Historic Preservation Officer (SHPO) who will assist in defining the limits of any historical or archaeological investigations required.

3.9 Selected Alternative **10.8**

After all the above factors are considered, one plan is selected and described in detail.

3.10 Service Agreements **10.9**

Where more than one municipality is to be served by the project, it will be necessary for the lead municipality to negotiate service agree-

Ref.

ments. Achieving agreement may be time consuming; therefore, such action should be initiated as early as possible. Service agreements must be drafted prior to the approval of the facility plan and be completed before a Step 2 grant may be awarded.

NOTE: The completed facility plan is submitted to the Regional and/or State clearinghouse(s) for comments. If negative comments are received, an explanation must be given as to how the conflicts will be resolved. The completed facility plan and clearinghouse comments (and explanation if needed) are submitted to the State agency and to EPA. DO NOT undertake additional project work until instructions to do so are received from EPA.

Grantees will be notified in writing of facility plan approval and will be given instructions for applying for a Step 2 grant.

Payments for work completed under the grant are to be requested, using EPA Form 2550–16, in accordance with the payment schedule in the Grant Agreement. (See 14.9)

4.0 STEP 2 APPLICATION

NOTE: The following items are necessary to apply for a Step 2 grant and are to be submitted to the State agency.

4.1 Facility Plan 8.7

An approved facility plan, as described under Step 1, is required as a part of the Step 2 application. If it has already been approved by EPA, only a copy of the approval letter need be submitted.

4.2 Application, EPA Form 5700–32 ..... 9.2

Each item should be completed in accordance with instructions. Of particular importance is the need to clearly explain the source of the local share of project costs (general taxes, sewer revenue funds, etc.). A copy of the resolution authorizing the official representative (Mayor, Councilman, etc.) to act on behalf of the applicant and a statement regarding availability of the proposed site, when applicable, must be attached.

4.3 Selection of Professional Engineer 9.3

Copies of proposed contracts, or an explanation of how contracts for professional services will be awarded, must be included.

4.4 User Charges 11.1

Grantees are required to develop a user charge system, applicable to all users, covering operation and maintenance costs of the treatment works. The charges must be sufficient to allow the treatment works to be operated self-sufficiently.

Applicants are also required to submit a statement or resolution indicating that a user charge system will be developed in accordance with EPA regulations.

Ref.

4.5 Industrial Cost Recovery **11.2**

Industries served by the proposed project must pay their share of the capital cost of construction funded by EPA. Also, each industry contributing 10% or more of the sewage must submit a letter stating that it will comply with the industrial cost recovery system developed for the project and indicating its expected period of use of the facilities.

4.6 Sewer Use Ordinance **11.3**

A copy of existing sewer use ordinances, or a letter of intent that such ordinances will be enacted, must be included. The ordinances must require that new connections be properly designed and constructed and be free from storm water flow.

4.7 Civil Rights Act of 1964 ..... **N/A**

EPA Form 4700–1, Assurance of Compliance, and EPA Form 4700–4, Compliance Report, are to be completed.

4.8 The Uniform Relocation and Land Acquisition Policies Act of 1970 ..... **11.4**

If the project will require the acquisition of private property or the displacement of persons, a statement or resolution indicating compliance with this Act must be submitted.

4.9 Service Agreements **10.9**

Service agreements must be drafted prior to the approval of the facility plan and be completed before a Step 2 grant may be awarded.

NOTE: The application and accompanying documents must be reviewed and approved by both the State agency and EPA. DO NOT proceed with any work on the project until instructions to do so are received from EPA. Grantees will be notified in writing when a grant is approved and instructions will be provided as to procedures for accepting the grant and executing the Grant Agreement (EPA Form 5700–20).

5.0 STEP 2: Plans, Specifications and Estimates

NOTE: A Step 2 grant is awarded to enable the applicant to design his project and otherwise ready it (plans, specifications and estimates) for bidding. Predesign conferences may be required by the State or EPA. At these conferences the responsibilities of each party will be discussed as well as the administrative and technical requirements of the project.

The following is a list of technical and administrative items to be considered during this phase of the project.

5.1 Project Design ..... **N/A**

The project, in addition to being designed in accordance with sound engineering practice, must take into account those engineering and environmental measures recommended in the approved facility plan. Also, incompatible industrial wastes may not be introduced into the municipal system but must be pretreated by the industry. Accordingly,

Ref.

the design may not contemplate the handling of such wastes.

Projects with estimated costs in excess of $10,000,000, excluding the cost of sewers, must be subjected to a value engineering (VE) analysis.

5.2 Project Specifications **12.1**

The project specifications must comply with all Federal requirements. Provisions which must be included in all specifications are furnished by the State or EPA in a preprinted form. Generally, the consulting engineer will be familiar with these provisions.

5.3 Project Cost Estimates **12.1**

The consultant is to prepare detailed construction cost estimates based upon the scope of work as reflected in the project plans and specifications. This estimate is used to judge the reasonableness of the bids received.

5.4 Continuing Work ..... **N/A**

While the following items need not be completed until the construction (Step 3) phase of the project is underway, work on them during the design phase should be maintained to insure their timely completion.

a. **Plan of Operation** **12.2**

A plan for the efficient operation and maintenance of the facilities must be developed.

b. **User Charge and Industrial Cost Recovery Systems** **11.1**

These systems may be complex and require substantial time to complete.

NOTE: Completed plans, specifications and estimates must be submitted to the State for review and approval prior to being sent to EPA. DO NOT undertake additional project work or advertise for bids until instructions to do so are received from EPA.

Grantees will be notified in writing of plan and specification approval and will be given instructions for applying for a Step 3 grant.

Payments for work completed under the grant are to be requested (using EPA Form 2550–16) in accordance with the payment schedule in the Grant Agreement.

6.0 STEP 3 APPLICATION

NOTE: The following items are required for a Step 3 grant and are to be submitted to the State agency.

6.1 Application, EPA Form 5700–32 ..... **9.2**

Each item should be completed in accordance with instructions. For Step 3 projects, the site information required in Part II-Section B of the application form is necessary. Also, the source and method of funding the local share of project costs should be clearly explained. A copy of the resolution authorizing the official representative (Mayor, Councilman, etc.) to act on behalf of the applicant must be included.

Ref.

6.2 Plans, Specifications and Estimates **12.0**

Approved plans, specifications and estimates suitable for bidding, as described under Step 2, must be included. If the plans, specifications and estimates have previously been approved by EPA, submit only a copy of the approval letter.

6.3 Selection of Professional Engineer **9.3**

Copies of proposed contracts, or explanation of how contracts for professional services will be awarded, must be included.

6.4 Assurances ..... **N/A**

In addition to the assurances contained in Part V of the application, additional assurances as described below are necessary when applying for a Step 3 grant. Some of the assurances may not be applicable to a particular project.

a. **Flood Disaster Protection Act of 1973** **12.1.5**

For projects which include structures to be located in a flood hazard area delineated by the Department of Housing and Urban Development, grantees must participate in the flood insurance program.

b. **Sewer Use Ordinance** **11.3**

A copy of existing sewer use ordinances, or a letter assuring that such ordinances will be enacted, must be included. The ordinances must require new connections to be free from storm water flows.

c. **Plan of Operation Schedule** **12.2**

A schedule for readying the facility for operation (staffing, training, purchase of chemicals, etc.), must be included.

d. **Sewer System Rehabilitation Scheduling** **10.3**

If the sewers leak excessively and it was determined that the leakage can be corrected by rehabilitating the sewers, a construction schedule for the rehabilitation work must be included.

6.5 Payment Schedule **13.1**

A realistic grant payment schedule is to be submitted with the application.

NOTE: The application and accompanying documents must be reviewed and approved by both the State and EPA. DO NOT advertise for bids nor proceed with any additional project work until instructions to do so are received from EPA. Grantees will be notified in writing of a grant offer and instructions will be provided for acceptance of the grant and execution of the Grant Agreement (EPA Form 5700-20).

7.0 STEP 3 CONSTRUCTION

NOTE: The primary activity of the Step 3 phase is the construction of the approved project. To insure that the project is properly constructed, financed, operated and maintained, will involve the grantee in numerous activities. Important among them are the following:

7.1 Advertising for Bids **14.1**

Only after receiving the Step 3 award may grantees advertise for bids.

Ref.

7.2 Receipt and Review of Bids **14.2**

Grantees must receive, review and tabulate the bids and submit copies of bid material and recommendations for award to EPA (through the State where required) for approval. *DO NOT* award contracts prior to receipt of authorization to do so from EPA.

7.3 Changes in Grant Amount **14.3**

Depending on the price of the lowest acceptable bid, the grant may need to be increased or decreased. The State must approve and certify all grant increases before they may be considered by EPA.

7.4 Protests **14.4**

If any contractor or equipment supplier lodges a protest against the bidding procedures, grantees must attempt to resolve the protest using advice from their legal counsel. Also, grantees must notify the State and EPA of each protest and how it was resolved.

7.5 Award of Construction Contracts **14.5**

After the bids have been reviewed and approved by the State and EPA and *after* having received authorization to do so from EPA, construction contracts may be awarded.

7.6 Preconstruction Conference **14.6**

A preconstruction conference may be held to discuss the responsibilities of all participants, including the grantee, the grantee's consultant, the contractors, the State and EPA.

7.7 Change Orders **14.7**

During construction it may be necessary to modify the project. Changes to the construction contract are generally made by the use of change orders which must be approved by the State and EPA.

7.8 On-Site Inspections **14.8**

The State or EPA will periodically make on-site inspections to monitor construction procedures and to review project related documents.

7.9 Grant Payments **14.9**

Grant payments may be made in accordance with the payment schedule contained in the grant agreement. However, payments may not exceed 50%, 80% or 90% of the grant amount until certain program requirements are fulfilled. These include the development of a system of user charges, an industrial cost recovery system, a plan of operation, etc.

7.10 Audits **14.10**

Records and documents of the project must be maintained as they are subject to an audit by EPA to substantiate project expenditures.

NOTE: Other program elements are covered in 15.0 and 16.0.

Part II: Explanation of items summarized in Part I

8.0 PREAPPLICATION INFORMATION

8.1 Applicant Eligibility

An eligible applicant is: "a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or pursuant to State law, or an Indian tribe or an authorized Indian tribal organization, having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under Section 208 of the Act." This definition excludes a special district, such as a school district, which does not have as one of its principal responsibilities the treatment, transport, or disposal of liquid wastes.

8.2 Types of Projects

The types of projects eligible for a 75% Federal grant include sewage treatment plants, interceptor and outfall sewers, trunk and collection sewers, and overflow control facilities for combined sewer systems. It is the policy of EPA and the States to consider the construction of treatment facilities and needed interceptor sewers as more urgent than the other types of projects.

To be eligible for a Federal grant, the project must have as its principal purpose the treatment of domestic wastes from an entire community or region. Therefore, treatment facilities for power plants, airports, mass transportation or drinking water plants are *not* eligible for a grant under P.L. 92-500.

8.3 Priority List

Each year each State is apportioned a sum of money (allotment or allocation) for construction grants. Grants from these funds are made directly by EPA for those projects which the State determines are entitled to priority for a grant over other eligible projects in the State. The State system of determining priority of projects must give consideration to:

a. the severity of pollution problems;
b. the existing population affected;
c. the need for preservation of high quality waters;
d. national priorities;
e. any additional factors considered pertinent by the State.

Each project which is to receive a grant must be certified by the State as entitled to priority for such grant over other projects in the State. Only projects so certified by the State may receive a construction grant.

States may reserve up to 10% of their alloted funds for Step 1 and Step 2 projects which are found to be highly important to the State's program but which did not appear on the priority list.

States will provide interested persons with information concerning their priority systems as well as details on the ranking of particular projects. Priority lists must be subject to a public hearing at which time communities, concerned with the funding of a project, may make their interests known.

8.4 Three Step Process

Public Law 92-500 provides for the funding of projects in three steps, namely:

Step 1—Planning and Preliminary Design
Step 2—Plans, Specifications and Estimates
Step 3—Construction

Federal grants are available for each of these types of projects. However, the award of a grant for one step does not commit EPA to fund subsequent steps.

For projects on which work was started prior to June 30, 1975 without an EPA grant, the applicant should contact the State agency or EPA to determine the extent to which the work may be eligible for grant funds.

8.5 State Water Quality Management Plan

The law requires all States to prepare water quality management (river basin) plans for the waters within the State. The basin planning process may establish the water quality standards to be achieved for each water body within the river basin. One result of these studies is the classification of streams or rivers into "water quality limited" or "effluent limited" segments.

On "effluent limited" stream segments, all sewage treatment works must provide a minimum of secondary treatment (approximately 85% pollution removal). On "water quality limited" stream segments, all treatment works must provide a still higher degree of treatment in order to meet water quality standards.

It is the State's responsibility to prepare the basin plans and advise each applicant of the level of treatment (effluent limitation) required. Sewage treatment works constructed with Federal funds must comply with this requirement.

8.6 Areawide Waste Treatment Management Plan

Areawide waste treatment management plans (often referred to as 208 plans) are prepared for areas having more serious pollution problems. Generally these are urban-industrial areas and are designated for study by the Governor.

Plans prepared under section 208 of the law not only study the pollution discharges from sewage treatment facilities but also the pollution caused by rainfall runoff and other sources. These plans examine alternatives for solving or controlling all forms of water pollution and may recommend broad based control measures beyond the construction of sewage treatment plants.

EPA may give grants to planning agencies to carry out these studies. The completed plans will designate one or more agencies to implement its recommendations. Since only those agencies designated in the plan are eligible for a construction grant, prospective applicants should first determine, by contacting the State agency, whether their proposed project is located in an areawide waste treatment management planning area.

8.7 Facility Planning

Preparation of a facility plan is the first step of the three part construction grants process. Through the plan, specific recommendations

for the treatment plant site, size, type of process, method of effluent and sludge disposal, interceptor sewer routing and other steps necessary for constructing the project are developed.

Ideally, the State water quality management plan (item 8.5 above) establishes the level of treatment necessary for each sewage treatment facility, the areawide waste treatment management plan (item 8.6 above) designates the facility planning area, and the implementing agency prepares a facility plan to develop a specific project which is cost effective and environmentally sound. The State agency will designate the boundaries of the facility planning area in cases where they have not been designated by areawide waste treatment management plans. When the boundaries encompass more than one political jurisdiction, service agreements or other contractual arrangements may be necessary between jurisdictions. Negotiations must begin early to assure the timely completion of the project.

Cases will arise in which facility planning areas and areawide waste treatment management planning areas overlap. Coordination and cooperation are essential to avoid duplication.

Many areawide waste management plans are in the development stage. The preparation of facility plans should not await the completion of such plans, but 208 planning agencies should have the opportunity to comment on facility plans.

Later items in this handbook describe specific topics of a facility plan in more detail. Further information is provided in the EPA publication, *Guidance For Preparing A Facility Plan, Revised May, 1975*, and *Model Facility Plan for a Small Community September, 1975*.

8.8 Municipal NPDES Permits

P.L. 92–500 established the National Pollution Discharge Elimination System (NPDES) as the enforcement mechanism for achieving water quality standards. The NPDES permits issued under the system are applicable to all municipal discharges and the municipalities must comply with their provisions. Where basin, areawide waste management or facility plans have been established, the permits will require compliance with such plans.

The NPDES permit may contain limitations, conditions or schedules which will require the municipality to undertake the construction of a wastewater treatment facility.

8.9 Clearinghouse(s)

Applicants for construction grants for wastewater treatment facilities are required to comply with the Office of Management and Budget (OMB) Project Notification and Review System (Circular A–95). This system is established to provide for early contact between applicants and governmental agencies and to insure coordination between related projects.

Prior to submission of a Step 1 grant application, and after the completion of a draft facility plan, applicants are required to obtain comments from the State and/or Regional clearinghouse(s). The applicant is to include copies of these comments with the application package. If the comments are adverse, the applicant is to submit a statement explaining how the comments were considered.

9.0 STEP 1 APPLICATION

9.1 Plan of Study

A plan of study outlines the work to be done in preparing a facility plan. It should be brief and generally follow the format suggested in the "Model Plan of Study," a supplement to the *Guidance For Preparing A Facility Plan*. Unique features of the project which will require special attention, such as water-short areas, recreational areas, economically depressed areas, etc., should be addressed.

The plan of study is reviewed by both the State and EPA to insure compliance with municipal permit conditions, previously approved water quality management plans, interstate agreements and other applicable requirements.

Once approved, the plan of study is incorporated into the grant agreement along with a schedule for the completion of the specific tasks and itemized costs for each of these tasks. From the schedule of tasks and costs, a payment schedule is developed and made part of the Grant Agreement.

9.2 Application, EPA Form 5700–32

The application form contains instructions for its preparation and assurances with which the applicant must comply. The application must be accompanied by a formal resolution of the governing body designating, by name and title (Mayor, City Manager, City Clerk, etc.), the authorized representative to act in behalf of that body in all matters related to the grant process. This person must be an official of the governmental unit rather than the consulting engineer or other professional consultant. The resolution should specifically authorize the representative to make application, submit other documentation as required, accept the grant offer and act for the governing body in all grant related matters. In the event that the representative is replaced, a resolution naming the new representative must be submitted.

9.3 Selection of Professional Engineer

The most common contracts (subagreements) are the engineering contracts between the municipality and the consulting engineer. Detailed requirements and procedures for obtaining professional services are presented in 40 CFR 35.936 and 35.937 published December 17, 1975 in the Federal Register.

Essentially the regulations require that the need for architectural/engineering (A/E) services be advertised so that qualified firms may offer their services. (This does not apply to communities under 25,000 population.) At least three firms which display acceptable professional qualifications to do the work are requested to submit proposals for the project. Proposals may or may not include costs for professional services. Professional fees are negotiated so that the professional receives a fair and reasonable profit and the municipality obtains competent services at a fair cost.

A cost review is to be conducted by the applicant with costs being presented to EPA in a prescribed form. Additional cost breakdowns may be required by EPA for a particular project to establish reasonableness of the costs.

If the applicant is satisfied with the services of the firm selected to do the Step 1 or Step 2 work, the same firm may be used for additional work, providing the firm has the capability and resources to carry out such work on schedule and a fair fee can be negotiated. Likewise, the grantee may terminate the A/E contract if the contractor fails to perform.

Various types of contracts are acceptable but cost-plus-percentage-of-cost and the percentage-of-construction-cost types of contracts are prohibited. Generally, separate fee negotiations should be conducted for each Step 1, Step 2 and Step 3 grant.

Grantees must show evidence of making "positive efforts" to allow small businesses and minority owned businesses to compete for sub-agreements and contracts.

In cases where subagreements for professional services predate the implementation of the procurement regulations, the transition policy as described in Appendix D of the regulations (12/17/75), will be used. All work initiated after 6/30/75, in order for it to be eligible for grant funds, must be approved in advance by EPA.

It is recommended that applicants contact the State agency or EPA before executing contracts if there are any questions to be resolved.

10.0 STEP 1 FACILITY PLAN

10.1 Effluent Limitations

The degree of treatment which must be provided by a particular treatment plant is dictated by the effluent limitations. The effluent limitations are established by the State (or, in some cases, by EPA through the NPDES permit). The effluent limitations may require that the plant discharge not over 20 milligrams per liter (mg/l) of biochemical oxygen demand (BOD), 12 mg/l of suspended solids (SS), and a dissolved oxygen of 5.0 mg/l. If the sewage entering the treatment plant has a BOD of 200 mg/l and SS of 240 mg/l, the grantee would be required to provide 90% BOD removal, 95% SS removal and the addition of oxygen to the effluent before discharge. The effluent limitations will vary according to the nature of the receiving waters and would also be different if the effluent were to be used to recharge the groundwater or to be disposed of on land. The effluent limitations determine the type of treatment works and the operational efficiency required and are, therefore, of considerable importance.

10.2 Alternatives

An important aspect of a facility plan is the investigation and evaluation of various alternative solutions to the water pollution problems. In the case of sewage treatment plants these alternatives will include an evaluation of the existing facilities. This evaluation will determine whether the operation of the existing plant can be improved enough to provide the required level of treatment, thus precluding the need for new construction. If this is not practicable, alternatives such as size, location, type of process, phasing of construction, rehabilitation, etc. should be considered.

Best practical waste treatment technology (BPWTT) must be taken

into consideration and includes, as a minimum, an evaluation of the following three waste treatment management techniques.

a. biological or physical-chemical treatment and discharge to receiving waters,
b. treatment and reuse,
c. land application techniques.

For sewers, alternates (including size, type and routings) must be considered.

Initially the most feasible alternatives are identified and, through a preliminary screening process, the best alternatives are selected. These alternatives are then evaluated on the basis of engineering, environmental, cost, and ability-to-be-implemented considerations. This process results in the selection of the most cost effective solution. A "no-action" alternative must also be considered. The entire process of evaluating these alternatives must be explained and described in the facility plan.

10.3 Infiltration/Inflow (I/I) Analysis

For projects which have existing sewers, it is necessary to prepare an infiltration/inflow (I/I) analysis as a part of the facility plan. Infiltration is groundwater which leaks into the sewers, whereas inflow is storm water which enters the sewers. The distinction is made between the two types of flows because infiltration is more constant depending on the groundwater level, while inflow is more of a peaking phenomenon related to above ground precipitation. Inflow occurs at distinct points and may therefore be economical to correct. Infiltration is more generally distributed (if one joint in an old pipe has deteriorated and is leaking, other joints in the same reach of pipe may also be leaking) and may be quite costly to correct.

The I/I analysis must quantify the infiltration and inflow and estimate how much it would cost to remove part or all of the I/I from the system. Also, the cost of transporting and treating the I/I must be estimated and the most economical combination between I/I removal or treatment must be determined. Since infiltration and inflow take up valuable capacity in the sewer pipes, pumping stations and treatment plants, it is generally economical to remove some of these excessive flows. Therefore, in the I/I analysis, a preliminary determination must be made of the amount of excessive I/I to be removed and the amount to remain in the system. The amount of I/I which may be economically removed is designated "excessive." An alternate approach would be to determine possible excess infiltration and proceed with treatment plant design based on assumed elimination of inflow and nominal infiltration of 1000 gallons per day per inch of pipe diameter per mile of sewer.

If the amount of excessive I/I is great, it will be necessary to more accurately estimate the cost of removal by performing a sewer system evaluation survey. *DO NOT* proceed with a sewer system evaluation survey until receiving authorization to do so from EPA.

10.4 Sewer System Evaluation Survey

An evaluation survey is the second step in the sewer system evaluation and is conducted only if the infiltration/inflow analysis concludes that excessive infiltration/inflow exists. Grant funds for conducting a

sewer system evaluation survey may be obtained by requesting an increase in the Step 1 grant.

Cost of rehabilitation of sewers is eligible for grant participation. However, some States, due to allotment constraints and other high priority needs, do not certify sewer system rehabilitation projects for grants.

Sewer System Evaluation is the subject of an EPA Guidance booklet dated March, 1974. Generally, the evaluation survey consists of some or all of the following:

a. a physical survey of the system;
b. smoke bomb, air pressure testing or rainfall simulation by flooding sections of storm sewers;
c. selected sewer system cleaning;
d. visual (e.g., television) inspection of selected sewer sections;
e. the preparation of a report of needed rehabilitation of the sewers.

Generally, grantees would not inspect the entire sewer system using TV cameras. TV inspection is very expensive and must be justified to obtain Federal funding.

The evaluation survey will identify specific sections of the sewer system which are to be rehabilitated: grouted, sealed, lined, replaced or otherwise repaired. Rehabilitation carried out under contract is subject to the same requirements as other construction contracts or subagreements.

10.5 Environmental Assessment

The National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies to prepare environmental impact statements (EIS) for projects which have significant adverse environmental effects or environmental impacts which are likely to be highly controversial. Therefore, to allow EPA to decide if an EIS is to be prepared, grantees are required to prepare an environmental assessment (EA), as a part of the facility plan, which includes an environmental inventory, an evaluation of the alternatives and proposed mitigative measures. The EA is similar in content to an EIS and is required for all projects.

If, after reviewing the completed facility plan (which contains the environmental assessment), EPA decides that the proposed project does not warrant the preparation of an environmental impact statement, EPA will issue a "negative declaration" and appropriate public notices. On the other hand, if EPA decides that an EIS is warranted, a "notice of intent" will be issued and made public. EPA will then prepare a draft EIS extracting as much information as possible from the EA.

A variation of this procedure is used for those projects which are known in advance to have significant or controversial environmental impacts. In such cases, and with all parties agreeing, a facility plan and an environmental impact statement will be prepared simultaneously. This procedure, known as "piggybacking", is intended to save time and money yet satisfy all the requirements of the construction grants program.

10.6 Public Input

Public participation is required to aid the grantee in selecting a plan which will be cost effective, environmentally compatible, and have the widest public acceptance and opportunity for implementation.

Issues involved in solving water quality problems and in the expenditure of large Federal sums are often sensitive and may come under attack from varied interests. Although the primary responsibility for carrying out water pollution control and abatement programs rests in governmental agencies, public involvement in the decisions and implementation is necessary and desirable. The intent of public participation is to foster a spirit of openness and a sense of mutual trust between the public and governmental agencies in efforts to restore and maintain the integrity of the Nation's waters. The facility plan must contain a summary of the measures taken to provide for, encourage, and assist public participation in the plan selection. The summary must also disclose the public response to the alternatives presented and how significant responses were incorporated into the plan.

In addition to any informal meetings or other forms of public participation, a formal public hearing must be held prior to plan selection. Reports, documents or other data to be discussed at the hearing must be available to the public at convenient times and places approximately 15 days prior to the hearing. Also, the hearing must be announced through the news media at least 30 days prior to the hearing.

10.7 Historical and Archaeological Investigations

To comply with the requirements of the National Historic Preservation Act of 1966, Executive Order 11593, and other applicable State and Federal laws, it is necessary that an investigation be made of the impacts a project may have on historical or archaeological sites. These investigations may vary from literature searches to field surveys. The initial step, once the project scope is determined, is to contact the State Historic Preservation Officer (SHPO) to obtain specific advice as to the extent of investigations necessary.

The SHPO may recommend that qualified professionals be hired for "walk-through" or "windshield" preliminary investigations. The reasonable costs for these investigations are eligible for grant participation, but EPA must be advised at each successive stage before additional costs are incurred.

10.8 Selected Alternative

After all investigations and alternatives are evaluated as part of the facility plan, one alternative is selected and described in greater detail. The selected plan describes the project for which Step 2 detailed design and Step 3 construction grants may be requested by the applicant. The depth of detail used to describe the selected plan will vary with the size and complexity of the project. ***The amount of detail should be discussed with and agreed upon by the State and EPA before completing the facility plan.***

Cost estimates of the selected plan must be accurate and are to be used in completing the application (EPA Form 5700-32) for a Step 2 grant.

10.9 Service Agreements

If a project involves more than one political jurisdiction, it will be necessary to work out service agreements. These agreements will include financial arrangements and require each jurisdiction to enforce

the requirements for user charges, sewer system rehabilitation, industrial cost recovery, sewer use ordinances, etc. The details of the service agreements will vary from project to project. Because the time required to complete service agreements can be long, action on them should be initiated as early as possible during the preparation of the facility plan. Service agreements must be drafted prior to approval of the facility plan and be completed before the award of a Step 2 grant.

If wastes from a Federal facility to be treated in a proposed municipal waste treatment plant make up more than 5% of the design flow or total more than 250,000 gallons per day, EPA cannot participate in the construction costs attributable to such wastes. EPA will however participate in the costs of related Step 1 Facility Planning; and Step 2 costs *if* the Step 2 grant received State certification prior to December 29, 1975.

11.0 STEP 2 APPLICATION

11.1 User Charges

User charges are fees paid by users of the facilities to cover the operation and maintenance costs of the system. Industrial, commercial and residential users are charged a proportionate fee based on the wastewater treatment service provided. At the time of this writing (April, 1976), a user charge (UC) system based on the use of "ad valorem" taxes is not an acceptable basis for proportioning the charges. However, legislation is pending before Congress to allow the use of ad valorem taxes for this purpose. Grantees should investigate this matter before completing a user charge system.

At the time of a Step 2 grant application, applicants must submit a statement or resolution acknowledging their awareness of the need for preparing a user charge system in accordance with the regulations (40 CFR Part 35 Subpart E, and Appendix B) and a procedural schedule for completing such a system. While preparing the detailed project design (Step 2 grant), grantees should also be working on the user charge system. EPA may not pay more than 50% of the Step 3 grant until evidence of the timely development of the system is received. Also, no more than 80% of the grant may be paid until the user charge system is approved by EPA. By the time the project is completed and ready to operate, an approved user charge system must be ready to be implemented.

11.2 Industrial Cost Recovery

Industrial cost recovery (ICR) is a system which recovers from industrial users of the wastewater treatment facilities that portion of the Federal grant which relates to the industry's proportionate share of the capital cost of the project. The repayment period may extend for as long as 30 years. Half of the recovered funds are kept by the grantee (to be used primarily for expansion and reconstruction) and the other half is returned to the Federal government.

At the time of a Step 2 grant application, each industry contributing 10% or more of the sewage must submit a letter of intent to comply with the industrial cost recovery system developed for the project. While industries contributing less than 10% of the total are not re-

quired to submit letters of intent, it is necessary for the grantee to assure EPA that *all* industrial users will be charged their proportionate share. Grant payments are limited to 50% of the Step 3 grant until evidence of the timely development of the ICR system is submitted (similar to the user charge requirements) and to 80% of the Step 3 grant until the industrial cost recovery system is approved.

11.3 Sewer Use Ordinance

Applicants for a Step 3 grant must submit a current sewer use ordinance or a letter of intent to enact such an ordinance. The sewer use ordinance must prohibit new sources of inflow (illegal connections from sump pumps, foundation drains, roof leaders, etc.) from being connected to the sewer system, require proper design and construction techniques for new connections and require pretreatment or the elimination of wastes which will interfere with the plant's operation. No more than 80% payment of the Step 3 grant may be made until the ordinance is approved by EPA.

11.4 The Uniform Relocation and Land Acquisition Policies Act of 1970

Projects which entail the acquisition of private property or the displacement of persons are subject to the provisions of the Uniform Relocation and Land Acquisition Policies Act of 1970 (40 CFR Part 4 addresses these requirements). Basically, the Act establishes procedures for equitable settlement in such cases. Although the actual cost of land purchased for the project is generally *not* eligible for grant participation (except in certain cases when the land is an integral part of the treatment process), certain costs associated with complying with this Act may be eligible. The Step 2 grant application must include a statement or resolution assuring that the grantee will comply with the applicable provisions of this Act and a time schedule of compliance.

12.0 STEP 2 PLANS, SPECIFICATIONS AND ESTIMATES

12.1 Project Specifications

The end product of the Step 2 detailed design is a set of plans (drawings), specifications and detailed construction cost estimates which are suitable for bidding and construction purposes. Since large sums of public funds will be spent on constructing the project, it is of the utmost importance that the plans, specifications and estimates be as complete and accurate as possible. Plans, specifications and estimates must be submitted to obtain the final Step 2 grant payment and approved plans and specifications must be submitted to obtain a Step 3 grant.

The provisions of many Federal, State and local laws must be satisfied when advertising for and constructing public works projects. To assist grantees in satisfying most of these requirements, EPA has prepared a standard set of inserts which must be included in every construction contract. Copies of these documents may be obtained from the State or EPA. Key elements of the Federal requirements to be included in the contract documents are highlighted below.

12.1.1 Contract Documents

The contract documents must contain the following six items:

- A statement of work, including drawings and specifications, and a required time-for-completion schedule;
- the terms and conditions of the construction contracts;
- an explanation of method of bidding, method of evaluating bid prices and the basis upon which award of the contract will be made;
- the criteria for evaluating bidders;
- a statement indicating that the project is partially funded with Federal money but that the government is not a party to the contract;
- copies of 40 CFR 35.936, 35.938 and 35.939.

12.1.2 Supplemental General Provisions of Specifications

The requirement for supplemental general provisions in the specifications is satisfied by including Appendix C–2 of 40 CFR Part 35 in the specifications. This appendix includes conditions relating to the following subjects.

- audit and access to records;
- price reduction for defective cost or pricing data;
- contract work hours and safety standards;
- equal employment opportunity;
- utilization of small and minority business;
- a covenant against contingency fees;
- anti-kickback regulations;
- gratuities;
- patents;
- copyrights and rights in data;
- a clean air and water clause.

12.1.3 Equal Employment Opportunity

The Equal Employment Opportunity (EEO) provisions of the law must be followed and made a part of the specifications where contracts are greater than $10,000. In areas having an approved home-town or an imposed plan, the contract specifications must contain the specific provisions of the plan as published by the Secretary of Labor in the Federal Register. Home-town plans are agreements reached between the local contractors, trade unions, minority groups and governmental agencies which are approved by the Secretary of Labor and include the goals for hiring and training of minority groups. In such cases all contractors must agree to abide by the provisions of the plan.

In non-home-town plan areas, contractors will be required to comply with the provision of Executive Order 11246 and engage in affirmative action directed at promoting and insuring EEO in their work force.

Contracts in excess of $500,000 may require special provisions. EPA regional office will provide specific instructions for such cases.

12.1.4 Davis Bacon Act

Construction contracts in excess of $2,000 are subject to the provisions of the Davis-Bacon Act. This Act requires that contractors pay employees minimum wage rates as established by the Department of Labor. These rates are specified in Wage Determinations issued for

specific projects and reflect prevailing wages paid workmen in various crafts in a given locality. Area or General Wage Determinations, applicable to projects in larger metropolitan areas, are published periodically in the Federal Register. Wage Determinations are valid for 120 days and, along with any pertinent modifications, must be included in the bidding and contract documents.

12.1.5 Flood Disaster Protection Act of 1973

If the proposed project includes structures with a value of more than $10,000 which will be located in an area formally designated as a flood hazard area by the Department of Housing and Urban Development (DHUD), those structures must be insured under the flood insurance program administered by DHUD. In this instance, "structure" generally refers to a "building" having four walls and a roof. Such insurance, if required, must be maintained during both construction and the useful life of the structure.

Other provisions of this Act may be applicable to certain projects and should be taken into consideration during the preparation of the facilities plan.

12.1.6 Bonding/Insurance

For construction contracts in excess of $100,000 the following minimum bonding and insurance requirements must be a part of the specifications:

- 5% bid bond;
- 100% performance bond and 100% payment bond;
- fire and extended coverage, workmen's compensation, public liability and property damage and "all risk" insurance as required by local or State law;
- flood insurance, as required, during and after construction.

For contracts less than $100,000, bonding and insurance requirements shall be in accordance with local or State practices.

12.1.7 Technical Provisions of Specifications

The following items must be addressed in the plans and specifications for the project.

Safety Precautions: Occupation Safety and Health Act (OSHA) and applicable State and local requirements must be complied with.

Mitigative Measures: Mitigative measures required by the environmental assessment or impact statement must be complied with. Examples might be soil erosion control, hours of operation, backfilling and seeding, structural design for buildings in a flood plain, etc.

Bypassing: Bypassing of flows during construction must be prevented where possible.

Reliability and Flexibility: Proposed facilities are to be reliable and provide for flexibility in operation. This may be accomplished by providing for standby power, ample pumping capacity to insure continuous operation when the largest pump is out of service, etc.

Component Identification: Equipment, piping, switches, instruments, etc. must be clearly marked for ease of identification.

Public Water Supply: Public water supplies must be protected by

adequate backflow prevention devices (double check valves, air gap, etc.).

Chemical Storage: Chemicals must be properly stored in a curbed area large enough to hold the entire volume in the event of an accidental spill. Also, adequate safety protection gear must be provided for plant personnel.

Ventilation: Adequate ventilation must be provided in all areas where necessary (for example wet well, dry well, chlorine room, chemical storage area, etc.).

Laboratory Facilities: Laboratory facilities must be sufficient to give the plant operator control over the operational efficiency of the treatment plant. Additionally, facilities must be adequate to conduct sampling and testing as required by the NPDES permit or the State agency.

Emergency Alarms: Adequate alarms must be provided to warn of failures or dangers.

Use of Mercury: Mercury may not be used for trickling filter seals. Other uses of mercury require special review and approval.

Sewers: Sewers must be tested for infiltration. They must maintain minimum scouring velocity and have adequate capacity during peak flow periods.

Equipment: Except where based upon performance specifications, at least two trade names must be specified for all major items of equipment.

Operation & Maintenance: In selecting equipment and components, the consultant should give careful consideration to those which can be operated and maintained with the least effort.

Shellfish Waters: Appropriate measures to protect shellfish must be included where applicable.

Pretreatment: Incompatible industrial wastes must be pretreated where applicable.

Project Sign: A project sign must be displayed indicating EPA grant support.

12.2 Plan of Operation

A plan of operation is required for all treatment facilities. The plan should be, in large measure, a sequential listing of actions needed to ready the plant and its personnel for operation when construction is complete. Matters such as staffing and training requirements, operation and maintenance procedures, reports, laboratory testing, etc. must be considered in the plan. In short, the plan must detail the "who, when and where" of facility operation and maintenance.

The Operation and Maintenance Manual (prepared in conjunction with the Plan of Operation) is especially important since it provides plant personnel with detailed instructions for assuring efficient operation and proper maintenance of all plant components (including off-site pump stations, etc.). This manual should discuss how the facility is to be operated so as to meet effluent standards contained in the NPDES permit and other State and Federal requirements. Grant payments are limited to 50% of the Federal share of Step 3 costs until the draft manual or evidence of its timely completion is submitted. No more than 90% of the grant may be paid until the manual is approved.

13.0 STEP 3 APPLICATION

13.1 Payment Schedule

For each of the three "step" grants it is necessary to prepare a payment schedule for disbursement of grant funds. In establishing payment schedules, necessary State and Federal reviews need to be taken into account. Since the schedules establish the maximum amount of grant funds to be paid out during a specific period, it is important that they be prepared with care.

Once a payment schedule is established, any change will require the written approval of EPA. Payment procedures are explained in the section *Grant Payments* (14.9).

14.0 STEP 3 CONSTRUCTION

14.1 Advertising for Bids

Grantees must not advertise for bids until authorization to do so is received from EPA. When authorization is received, grantees must circularize the proposed project as widely as possible in order to get the best possible price. Preference for local contractors may not be shown. Generally, advertisements should be placed in newspapers, journals or other public notification and solicitation periodicals. If the estimated project cost is more than $10 million, advertisements for bids should be in journals having nationwide circulation. The advertisement must indicate where copies of the bidding documents, including the plans and specifications, may be obtained. Generally, at least 30 days is allowed for receipt of bids. The regulations, 40 CFR 35.938–4, which are included in the project specifications, contain additional specific requirements for advertising. These same bidding requirements also apply to sewer system rehabilitation work where necessary.

14.2 Receipt and Review of Bids

Bids must be received sealed and be opened publicly. The grantee, in reviewing them, must insure that all legal requirements are met and prepare a recommendation for award. Bid documents are forwarded, generally through the State, to EPA for approval. *DO NOT* award construction contracts until EPA approval to do so is received. As a minimum, the following documents are to be submitted to EPA after bids are received:

a. a certified bid tabulation of all bids received;

b. two copies of the proposal form and bonds from the apparent low bidder;

c. a statement from the grantee (authorized official) indicating the names of the bidders to whom contracts are to be awarded and the amount of the contracts;

d. proof of advertising indicating the circulation and time for receipt of bids;

e. a copy of each addendum issued during the bidding period and acknowledgement of receipt by the apparent low bidder;

f. signed copies of the certification by the apparent low bidder regarding compliance with EEO requirements.

g. if award is to be made to other than the low bidder, justification indicating why the low bidder is not responsive or responsible;

h. a revised cost estimate as necessary;

i. other documents required to conform with applicable State and local laws and ordinances.

In reviewing the bids, grantees should recommend that the contracts be awarded to the lowest responsive, responsible bidder. If there is reason to award a contract to other than the lowest bidder, advice should be obtained from legal counsel concerning such action. A full explanation, including the legal opinion, must be submitted to EPA for review. *DO NOT award contracts until authorization to do so is received from EPA.*

Rejection of all bids and readvertisement of the project may be done only for good cause.

14.3 Changes in Grant Amount

Grants may be increased or decreased at any point throughout the entire 3 step process where such action is warranted and justified. Grant changes require State approval and certification and the processing of a Grant Amendment. To minimize grant increases and decreases, each Step 3 grant may include an allowance for contingencies. The amount of the contingency will vary in accordance with the size and type of project and, where applicable, State policy.

Generally, if a grant increase is needed, it occurs because bids were higher than the engineer's estimate. In such cases, bid material must be submitted through the State to EPA with the request that the grant be increased. The State is under no obligation to approve the request nor is EPA obliged to increase the grant but will generally do so if the increase is justified and funds are available.

14.4 Protests

The award of construction contracts may result in protests from unsuccessful bidders, equipment suppliers or others. If a protest is received, the procedures outlined in the regulations, 40 CFR 35.939, must be followed. It is the grantees' responsibility to resolve protests. The resolution may vary from a protest without merit to the more complex case involving potential litigation.

Advice should be sought from legal counsel whenever protests are lodged. Grantees must advise the State and EPA of a protest, its foundation and method of resolution.

14.5 Award of Construction Contracts

After EPA has reviewed the bid information, it will authorize the award of the contracts providing all requirements have been satisfied. Grantees should inform EPA of the date of the contract award or notice to proceed.

At the time of award, a preconstruction conference should be conducted to insure that each party understands his responsibilities.

14.6 Preconstruction Conference

A preconstruction conference should be held with the grantee, contractor, State agency and EPA participating. The primary objective of the preconstruction conference is to discuss the responsibilities of each party in the project and to clarify any questions. Subjects to be discussed may include: posting and payment of minimum wages; equal employment opportunities; record keeping and requirements for on-site inspections by EPA or the State; processing of invoices and grant payment requests; processing and required approvals of change orders; etc.

14.7 Change Orders

A change order is the required method of modifying the construction contracts after work has begun and may result in a cost increase or decrease.

Contracts may need to be modified because of minor errors in the plans and specifications or emergency changes required to protect life or property. Prior approval by EPA of minor or emergency change orders is not required.

Project changes which will substantially alter the design or scope of the project, type of treatment, location, size, capacity or quantity of any major component, or which will require additional Federal funds, must receive prior approval from the State and EPA before being executed. Approved change orders resulting in construction cost increases are ordinarily paid out of the contingency allowance of the project. Where the change order or combination of change orders exceeds the contingency allowance, grantees may request an increase in the grant amount.

Change orders must be justified and are not to be used to circumvent the bidding requirements. The increased cost resulting from a change order must be reasonable and, when appropriate, grantees must negotiate with the contractor to insure that the price is fair.

14.8 On-Site Inspection

EPA or the State may conduct on-site project inspections to insure that the project is being managed properly, is on schedule, and is being constructed in accordance with approved plans, specifications and change orders.

On-site project inspections are made during construction (interim) and at the completion of construction (final). The frequency of interim inspections will depend upon the size and complexity of the project.

a. *Interim Inspections*—At the time of an interim inspection, the inspector will determine that:

- competent and adequate supervision and inspection is being provided and an appropriate inspector's log is kept;
- approved plans, specifications and change orders are available at the project site;
- construction conforms to approved plans, specifications and change orders, and is on schedule;

- the engineer's estimate of work-in-place agrees reasonably with actual observed construction;
- reasonable tests of materials and equipment are being conducted and noted in logs or reports (e.g., slump tests of concrete);
- equipment delivered to the site is being properly protected and stored;
- the required project sign is appropriately displayed;
- a wage rate decision is prominently displayed and agrees with contract documents;
- project accounting records are maintained which distinguish between allowable and non-allowable costs, and are supported by receipts or certified contractor invoices;
- safety provisions are being followed in accordance with OSHA requirements;
- special construction techniques or practices are being employed in accordance with the grant agreement;
- the operational staff has been hired and is being trained in accordance with the plan of operation;
- the operation and maintenance manual is being prepared;
- user charge and industrial cost recovery systems are being prepared;
- wastewater treatment during construction is being provided;
- a procedure is employed to call to the attention of the authorized representative any deficiencies in design or construction.

b. *Final Inspections*—In addition to the items above, the inspector will generally seek to determine that:

- the facilities are complete, operating and, in the case of a treatment plant, will meet the effluent limitations required by the NPDES permit;
- the facilities conform to approved plans, specifications and change orders;
- all equipment is operational and performing satisfactorily;
- the appropriate operation and maintenance staff has been hired and instructed in the startup and operational procedures;
- the laboratory facilities are complete and sufficient to conduct appropriate tests;
- the operation and maintenance manual is readily available and procedures are being followed;
- the accounting records are adequate and are available for audit;
- the user charge system, industrial cost recovery system and sewer use ordinance, if not previously approved, are completed.

Deficiencies noted during the inspections must be corrected. Delay in correcting deficiencies may delay grant payments.

14.9 Grant Payments

Grant payments are made in accordance with the payment schedule (see item 13.1) contained in the Grant Agreement. Payment requests may be submitted on the basis of project funds expended (cash) or on the basis of project costs incurred (accruals), and will be submitted on EPA Form 2550–16. Supporting documents (vouchers, reports, etc.) may or may not be required depending on the complexities of the pay-

ment and the policies of the State and EPA region in which the project is located. Regional Offices will inform grantees of the kind of supporting documents needed for interim grant payments.

Only those allowable costs for which project funds have been expended or for which project costs have been incurred may be considered in determining the amount of a payment.

EPA must limit grant payments to a certain percentage until specific program requirements are satisfied. The grant limitations for Step 3 grant payments are briefly summarized below.

a. *Operation and Maintenance Manual*—No more than 50% of the Federal share may be paid until a draft O&M manual is submitted, and no more than 90% may be paid until the manual is approved by EPA.

b. *User Charge System*—No more than 50% of the Federal share may be paid until the grantee has submitted adequate evidence of the timely development of a user charge system, and no more than 80% may be paid until the system is approved by EPA.

c. *Industrial Cost Recovery System*—No more than 50% of the Federal share may be paid until the grantee has submitted adequate evidence of the timely development of an industrial cost recovery system, and no more than 80% may be paid until the system is approved by EPA.

d. *Sewer Use Ordinance*—No more than 80% of the Federal share may be paid until a sewer use ordinance(s) has been submitted and approved by EPA.

e. *Sewer Evaluation and Rehabilitation Program*—In the case of excessive sewer infiltration, no more than 80% of the Federal share may be paid unless the grantee is complying with the sewer system evaluation and rehabilitation schedule agreed upon with EPA.

f. *Final Inspection*—Final payment may not be made until the final inspection has been completed and EPA has determined that the treatment works has been satisfactorily constructed in accordance with the grant agreement and approved plans and specifications.

14.10 Audits

By accepting a Federal grant for a Step 1, 2 or 3 project, grantees agree that their accounts, documents, records and papers, as well as those of subcontractors, will be accessible to EPA, the Comptroller General of the United States, or any authorized representative.

Auditors will review the project's management, accounting, procurement and property control records to insure that all costs claimed or incurred are eligible for grant participation. They will also review the project for compliance with all applicable grant provisions and conditions. Grantees will be notified well in advance of the audit so that all pertinent documents may be assembled for the auditor.

15.0 OTHER PROGRAM ELEMENTS

15.1 Allowable and Unallowable Costs

Certain costs incurred during the planning, design and construction of wastewater treatment facilities are defined in the law or regulations as

being eligible for EPA grant participation. The most obvious of these are the construction costs. However, other costs associated with the project may or may not be eligible for EPA grant participation. The item by item listing of these eligible costs would require many pages and is not included here.

Generally, to be eligible for grant participation, project costs must:

a. be necessary and reasonable and not a normal expense of municipal administration;

b. be authorized (or not prohibited) and be consistent with Federal, State and local laws and regulations;

c. be consistent with policies and regulations which are applicable to both Federally assisted activities and other activities of the unit of government of which the grantee is a part;

d. not be included in the costs allocable to any other Federally financed program.

15.2 Cost Effectiveness

The term cost effectiveness is used two ways in the construction grants program. In its broadest sense it includes the effectiveness of a project in achieving a desired goal (eliminating water pollution) by taking into account and weighing alternative actions (monetary costs, environmental impacts, social concerns and political considerations). Trade-offs between each of these considerations must be made but the most cost effective solution is the one which satisfies most of these considerations.

In the more limited use, cost effectiveness is used only with regard to monetary considerations. For example, it may be more cost effective (cost less money) to replace several hundred feet of broken sewers than to treat the resulting infiltration at the treatment plant.

15.3 Force Account

Some of the planning, designing or construction of a project may be accomplished by using municipal employees. Generally, however, EPA prefers that the grantee use outside consultants or contractors to accomplish project work. In cases where it is desired to use municipal forces, it will be necessary to obtain the prior written approval of EPA to do so. Applicants wishing to use force account procedures must certify that:

a. municipal employees possess the necessary skills and experience to accomplish the work;

b. the work can be done more economically by the use of municipal employees rather than consultants;

c. emergency conditions dictate that municipal employees be used.

If EPA approves of the force account method, the grantee will be notified in writing of such approval and will be advised as to what records to keep and what administrative costs are eligible for grant participation.

16.0 REFERENCES

Several types of references are available which can be of assistance to applicants.

To familiarize the applicant with the more commonly used references, the following is presented:

16.1 P.L. 92–500—Federal Water Pollution Control Act Amendments of 1972

P.L. 92–500 has four parts, each of which is called a "Title." Title II—Grants for Construction of Treatment Works, is the title under which EPA is authorized to award construction grants.

Each title is divided into sections. For example, the infiltration/inflow analysis (Step 1 grant) is required by Section 201 of the law. Section 208 establishes the requirement for Areawide Waste Treatment Management plans.

16.2 Code of Federal Regulations

After laws are enacted, it is often necessary for the administering agency to establish rules and regulations to implement the law. The resulting regulations are published in the Federal Register, become official policy and essentially carry the same weight as the law itself. The many regulations must be categorized and the term applied to each subject area is "Title." (Title 40 covers the subject "Protection of Environment." Title 12 is "Banks and Banking." Title 22 is "Foreign Relations.")

The titles are divided into Chapters. Chapter I, of Title 40, concerns the Environmental Protection Agency. Each chapter is subdivided into subchapters. Subchapter B concerns "Grants and Other Federal Assistance." The subchapters are subdivided into "Parts." Part 35 concerns "State and Local Assistance." Parts may be divided into Sections which are grouped into subparts. Subpart E covers "Grants for Construction of Treatment Works—Federal Water Pollution Control Act Amendments of 1972" and encompasses the 35.900 series.

Thus when reference is made to 40 CFR 35.917 it should be understood that the reference is to Title 40 of the Code of Federal Regulations, Part 35, Section 900, paragraph 917 "Facility Planning (Step 1)."

16.3 Other Publications

Periodically EPA publishes other documents which may be of assistance such as Guidelines or Guidance, Technical Bulletins and Reports, and Research Reports. Information regarding the subjects and availability of these publications may be obtained by contacting:

General Services Administration (8FFS)
Centralized Mailing List Services
Bldg. 41, Denver Federal Center
Denver, CO 80225

Also, EPA has published a "Handbook of Procedures: Construction Grants Program for Municipal Wastewater Treatment Work" for use by

State and EPA officials. Copies of these handbooks have been sent to engineering consultants and are available at GSA in Denver on a limited basis to others with responsibilities for construction grants projects.

16.4 Program Guidance Memoranda

These are policy clarification and regulation interpretation statements developed by EPA construction grants headquarters staff and distributed to its ten regional offices. Most of the information in these PGM's has been integrated into the newly published Handbook noted above.

Appendix

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